CITIPOWER

AUGMENTATION

FISHERMANS BEND MODERNISATION

CP BUS 3.06 – PUBLIC

2026–31 REGULATORY PROPOSAL

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1. Fishermans Bend modernisation

The Fisherman's Bend area serves approximately 15,000 customers. The area is home to Australia's largest urban renewal project, covering approximately 480 hectares in the heart of Melbourne. The transformation of Fisherman's Bend is guided by the Victorian Government's plan for the precinct to become an innovation hub as it becomes home to 80,000 residents by 2050.

The area is serviced by a network of six zone substations throughout Melbourne. A portion of the southern region is supplied by the Fisherman's Bend (E) zone substation, which is a 66kV/6.6kV facility established in the 1960s. Two of E's three original transformers have been decommissioned due to complications arising from their age.

1.1 Identified need

The identified need is to manage the retirement of E while supporting demand growth in the area and maintaining a safe and reliable supply of electricity.

1.1.1 Managing E towards retirement

E operates with a single transformer and has reached the end of its operational life. The average life expectancy of a transformer under normal operating conditions is typically between 40 to 50 years. With good maintenance and favourable conditions, some transformers can operate for longer depending on factors such as loading conditions, environmental conditions, and maintenance practices.

The remaining transformer at E has been operational for more than 60 years which introduces a higher probability of failure. Further, E has a switchboard that is 53 years old and has deteriorated in condition as it approaches end-of-life. The deterioration of site infrastructure presents operational risks to reliability and increased maintenance costs.

As it operates with a single transformer, all connected load is at risk in the case that the single transformer at E fails.

1.1.2 Upgrading legacy 6.6kV networks with modern 11kV networks

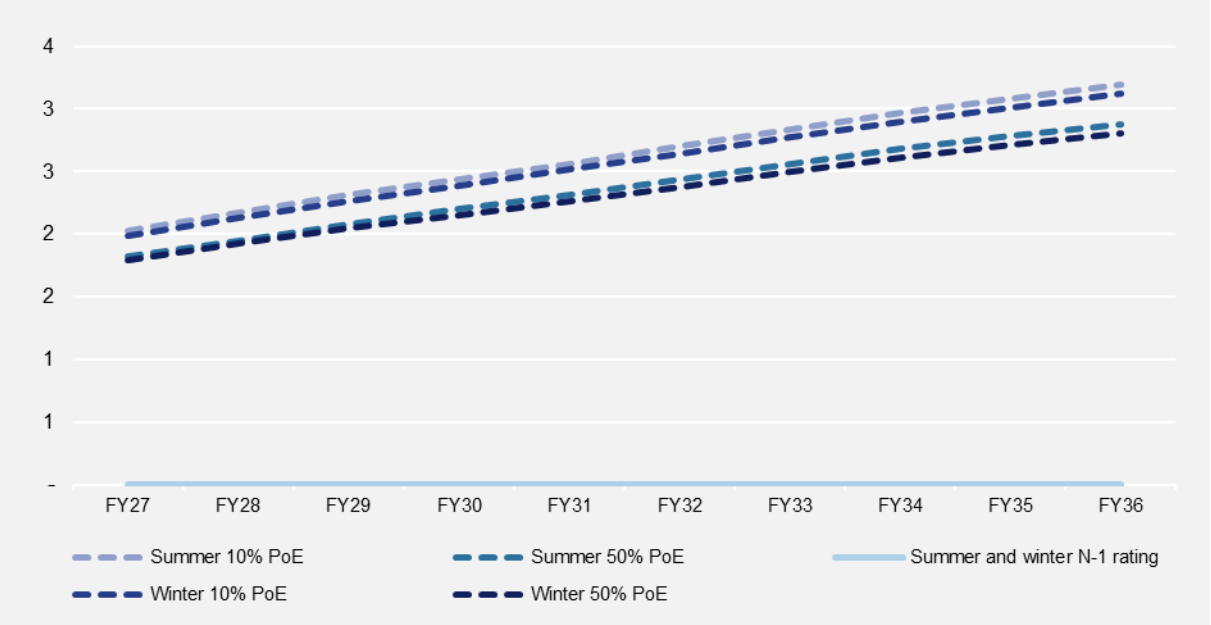
The Fisherman's bend area is serviced by a combination of 6.6kV and 11kV distribution networks. The 6.6kV distribution network is a legacy technology that was industry standard practice when these areas were first electrified. The 11kV distribution network is modern industry practice for efficiently servicing areas of greater population density due to its higher network capacity, better voltage performance and lower line losses.

Utilising two different operating voltages means that the area is supplied by two 'islanded' networks that cannot be operationally interconnected. This constrains our ability to restore supply to customers during outages because we cannot use the 6.6kV network to support the 11kV network and we cannot use the 11kV network to support the 6.6kV network.

1.1.3 Forecast demand

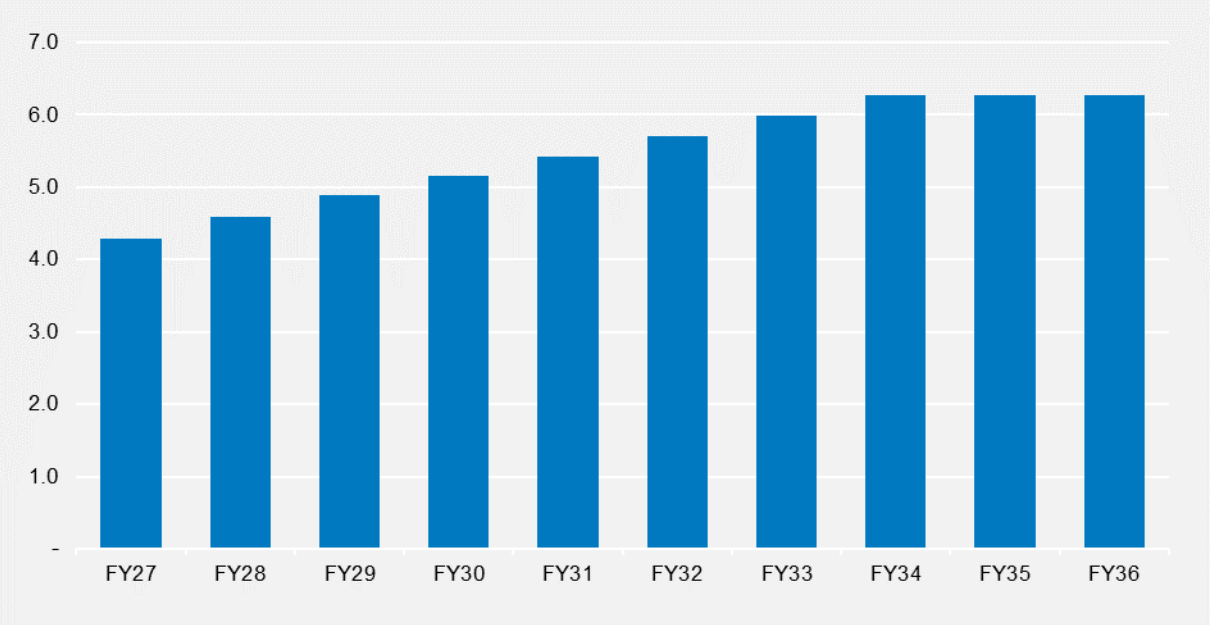
Forecast demand on E is expected to increase during the 2026–31 regulatory period, as shown in figure 1, placing additional load at risk due to capacity constraints in addition to the energy at risk in the case of the only transformer at E failing.

FIGURE 1 MAXIMUM DEMAND FORECAST AT E (MVA)



Energy at risk at E is also shown in figure 2. Energy at risk is forecast to increase by approximately 65% throughout the 2026–31 regulatory period.

FIGURE 2 VALUE OF ENERGY AT RISK IN E SUPPLY AREA ($M, 2026)



2. Assessment of credible options

Several options were considered to modernise supply in the Fisherman's bend area and address energy at risk in the area. A summary of the costs, benefits and net present value of each option considered is described below in table 1.

TABLE 1 OPTIONS SUMMARY ($M, 2026)

OPTION	PV COSTS	PV BENEFITS	NET BENEFITS
Maintain status quo	-	-	-
Offload E to Westgate zone substation (WG) at 11kV	-2.6	83.6	81.0
Recommission an auto transformer at WG to offload load at E to WG	-2.9	83.6	80.7

Further information describing each of our options can be found below. A full description of the costs, benefits and optimal timing of each option can be found in our detailed cost-benefit modelling.[1]

2.1 Option one: maintain status quo

Maintaining the status-quo provides no mitigation of the energy at risk other than through currently available operational responses such as limited load transfers. Load transfers cannot be undertaken in the event of failure of E's transformer.

This option will lead to increased risk of asset failures as E's condition continues to deteriorate, and increased severity of supply interruptions as the forecast loads supplied by E increase.

This option fails to address the identified need to maintain reliability of electricity supply to customers within required standards and is not a credible option. All options will be assessed relative to the base case.

2.2 Option two: offload E to WG at 11kV

This option involves offloading all load connected at E to WG by installing new distribution feeders and associated equipment. Following the installation of all new infrastructure and the total load transfer of E to WG is complete, E will be decommissioned.

While this option increases load at risk at WG, up to 15 MVA at WG can be supported with operational transfers to Southbank zone substation (SB) and Dock Area zone substation (DA) at the 11kV level without exposing connected loads to the risk of losing supply.

The works required to implement this option include:

- Converting and connecting four 6.6kV feeders at E and two 6.6kV feeders at WG to 11kV feeders

[1] CP MOD 3.02 - Fisherman's Bend modernisation - Jan2025 - Public

- retiring two 11/6.6kV auto transformers
- replacing 11 6.6kV distribution assets with 11kV rated assets.

The present value of expenditure required under this option and the benefits of offloading E to WG at 11kV relative to the status quo are described in table 2 below.

TABLE 2 OPTION TWO: BENEFITS ASSESSMENT SUMMARY ($M, 2026)

OPTION	PV COSTS	PV BENEFITS	NET BENEFITS
Offload E to Westgate zone substation (WG) at 11kV	-2.6	83.6	81.0

2.3 Option three: recommission WG auto transformer

This option would recommission an auto transformer at WG to offload load at E to WG while maintaining the distribution network assets of E at 6.6kV. The works required to implement this option include:

- Recommissioning of the WG027 feeder and the 11/6.6kV auto transformer
- Installing additional switching and more 6.6kV distribution network at E to connect to the auto transformer.

While this option would address energy at risk in the Fisherman's bend area, this option would not address the identified need of modernising legacy 6.6kV assets with 11kV conductors to increase operational network capabilities and support higher capacity power flows.

The present value of expenditure required under this option and the benefits of recommissioning an auto transformer at WG relative to the status quo are described in table 3 below.

TABLE 3 OPTION THREE: BENEFITS ASSESSMENT SUMMARY ($M, 2026)

OPTION	PV COSTS	PV BENEFITS	NET BENEFITS
Recommission an auto transformer at WG to offload load at E to WG	-2.9	83.6	80.7

2.4 Option four: non-network solution

To address the identified need of facilitating demand growth in the Fisherman's Bend supply area while managing the safe decommissioning of E, a non-network solution would need to ensure a reliable supply of electricity is maintained all year around. Given these requirements, it is unlikely that a non-network solution or stand-alone power system would be technically and economically viable to address the identified need.

We will continue to publish information on this constraint and project in the Distribution Annual Planning Report (DAPR) and follow our Demand Side Engagement Strategy for this project to ensure that non-network providers are given the opportunity to propose economic solutions that are technically and economically viable.

3. Preferred option

The preferred option for the 2026–31 regulatory period is option two: offload E to WG by replacing E's 6.6kV distribution assets with 11kV assets and decommissioning E. This option is preferred because it addresses the identified need and provides the highest net benefits.

Without this project, the increasing risk of asset failure at E perpetuates the increasing risk of supply interruptions for customers and there is insufficient system capacity to supply forecast demand. Our preferred option is the least cost option that maximises net benefits for our customers.

Further information can be found in our attached cost benefit modelling.[2]

Table 4 shows the capital expenditure forecast for the preferred option.

TABLE 4 EXPENDITURE FORECASTS FOR PREFERRED OPTION ($M, 2026)

EXPENDITURE	FY27	FY28	FY29	FY30	FY31	TOTAL
Capital expenditure	-	2.5	2.5	-	-	5.0

3.1 Sensitivity analysis

Sensitivity analysis was undertaken to understand the impact of increasing costs and decreasing the value of energy at risk mitigated on the net economic benefits of each option in different scenarios. option two provides the highest net economic benefit under all scenarios and remains the preferred option. Further information on our sensitivity analysis can be found in our attached cost benefit modelling.[3]

[2] CP MOD 3.02 - Fisherman's Bend modernisation - Jan2025 - Public

[3] CP MOD 3.03 – Fishermans Bend modernisation - Jan2025 - Public

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